TWO NEW SPECIES OF IOTONCHUS COBB
(NEMATODA: MONONCHIDA) FROM FIJI ISLANDS

by
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Two new species of Iotonchus Cobb, I. kirbyi n. sp. and I. rapidulus n. sp. collected in Fiji Islands by Marshall F. Kirby in 1976 are described.

The specimens were heat-relaxed, fixed in 3-5% formaldehyde solution and mounted in dehydrated glycerin; all measurements are from glycerin-mounted specimens.

IOTONCHUS KIRBYI n. sp.

Measurements

Paratypes: 4 ♂ ♂ (long-tailed): L = 2.95-3.31 (3) mm; a = 40-46 (44); b = 4.2-4.6 (4.3); c = 6.8-7.8 (7.4); c' = 7.8-9.1 (8.4); V = 67-72 (70); stoma = 58-64 × 32-33 μm; oesophagus = 675-740 (715) μm; tail = 370-425 (410) μm; anterior end to vulva = 2090-2285 (2140) μm.

5 ♂ ♂ (short-tailed): L = 2.84-3.27 (2.95) mm; a = 37-40 (38); b = 3.6-4.2 (3.8); c = 13.5-17.8 (15); c' = 3.1-4.2 (3.8); V = 72.0-74.3 (73); stoma = 60-62 × 31-33 μm; oesophagus = 690-740 (710) μm; tail = 160-220 (190) μm; anterior end to vulva = 1820-2390 (2100) μm.

Holotype ♂: L = 3.1 mm; a = 46; b = 4.2; c = 7.38; c' = 8.4; V = 70.5; stoma = 63 × 32 μm.
Description

Female: Body ventrally arcuate to C-shaped. Lip region continuous or slightly offset; 44-54 μm wide, 12-15 μm high; papillae raised; amphids oval, 5-7 μm in diameter, 13-21 μm from anterior end. Stoma cylindroid, about twice as long as wide, with metarhabdions 33-39 (36) μm long. Dorsal tooth at base of metarhabdion, small, pointing forwardly and ventrally, its tip 60-64 μm from anterior end of body. Telorhabdions forming a deep trough, dorsal and two inner subventral geusids 67-72 μm from anterior end; Geusid (from Greek geusis = taste) is a new name given to the chemoreceptors which open in the telostome through foramina — one dorsal, 2 inner subventrals at the junction of the meta — and telorhabdions and two subventrals near to and at the same radius as the inner subventrals (cf. Fig. 1, N). Excretory pore opposite anterior edge of nerve ring, 215-240 (225) μm from anterior end. Nucleus of dorsal gland about midway between orifices of dorsal and anterior subventral glands. Orifices of posterior subventral glands 3-10 μm apart, 15 μm behind gland nuclei; near base of oesophagus. Oesophageal base tuberculate, tubercles not sclerotized. Pseudo-monodelphic (Fig. 1, D). Vulva lips slightly raised. Vagina 0.3-0.4 times body width, with distinct sclerotization. Posterior branch of reproductive system reduced, non-functional, 170-260 μm long, with rudiments of ovary at end; anterior branch well developed, with conspicuous valve at end of glandular part of uterus, and a reflexed ovary. Uterine eggs 120-150 × 62-68 μm. Tail elongate conoid, ventrally arcuate, with rounded tip bearing terminal pore; variable in length; caudal glands distinct.

Male: Not found.

Type habitat and locality: Soil around roots of Pinus elliottii, Viti Levu Island, Fiji.

Type specimens: Collected by Marshall F. Kirby, after whom this species is named, in 1976. Holotype and female paratypes at C.I.P., St. Albans, England; 3 paratype females at Indian Agricultural Research Institute (IARI), New Delhi, India.

Relationship: Iotonchus kirbyi n. sp. is close to I. pseudodigonicus Ahmad et Jairajpuri, 1983, the only known species of Iotonchus with a pseudo-monodelphic gonad (Ahmad et Jairajpuri, 1983), but differs in having a longer body, a larger stoma, a longer posterior branch of the reproductive organs and a terminal caudal pore (♀ L = 1.45-1.58, stoma = 36-39 × 25-27 μm and caudal pore ventrally subterminal in I. pseudodigonicus).
Fig. 1 - A-G, *Iotonchus kirbyi* n. sp.; H-N, *Iotonchus rapidulus* n. sp.: B, E, H-J, M and N, Holotype females, remainder paratype females; A and H, Stoma regions; B, Oesophagus; C, Vulva region; D a and Db, Posterior and anterior branch of reproductive organs respectively; M, Posterior branch of reproductive organs; E, F, I and K, Tail ends; G, Oesophageal base; J, Entire female; L, Anal region; N, Stoma in subventral view showing 5 geusids.
IOTONCHUS RAPIDULUS n. sp.
(Fig. 1, H-N)

Measurements

Paratypes: 14 ♀ ♂: L = 1.7-2.3 (2) mm; a = 41-51 (47); b = 4.2-5.1 (4.7); c = 3.9-4.4 (4.2); c' = 13-18 (15.5); V = 55-66 (60); stoma = 30-36 × 19-27 μm.

Holotype ♀: L = 2 mm; a = 48; b = 4.5; c = 4; c' = 15.3; V = 11·60-56; stoma = 34 × 21 μm.

Description

Female: Body arcuate to C-shaped; maximum width 41-56 (45) μm. Lip region slightly wider than adjacent body; 31-33 μm wide, 10-13 μm high. Amphid apertures oval to slit-like, 4-5 μm long, 11-14 μm from anterior end of lip region. Stoma oval, metarhabdions 17-20 μm long. Dorsal tooth on a large elevation on proximal end of metarhabdion, forwardly pointing; its tip 32-35 μm from anterior end of body. Dorsal and inner subventral geusids 35-44 μm from anterior end. Excretory pore 143-166 μm from anterior end. Oesophagus 405-477 (440) μm long. Base distinctly tuberculate. Orifice of dorsal gland 160-196 μm from base of stoma. Vulva a small transverse slit, 1150-1421 (1280) μm from anterior end. Vagina about half body-width long; sclerotization distinct, roughly triangular in lateral view. Pseudo-monodelphic. Posterior branch poorly developed, with a rudimentary non-functional ovary; its total length 90-125 μm or 2.7-3.4 times body-width (Fig. 1, M). Anterior branch well developed, with a prominent valve at the distal end of glandular part of uterus.

Vulva-anus distance 250-355 (310) μm. Tail filiform, 430-540 (480) μm long; tip rounded, with terminal pore slightly eccentric to the dorsal side; caudal glands distinct (Fig. 1, I-K).

Male: Not found.

Type habitat and locality: Soil around roots of Pinus elliottii in Viti Levu Island, Fiji. Also collected from soils of coconut and oilpalm in Vanua Levu Island, Fiji.


Relationship: In having a pseudo-monodelphic reproductive system, Iotonchus rapidulus n. sp. come close to I. pseudodigonicus
Ahmad et Jairajpuri, 1983 but differs from it in having a longer but less robust body (♀ L = 1.45-1.58 mm; a = 31-34 in I. pseudodigonicus), and a longer posterior reproductive branch and tail (tail 326-371 μm long; c' = 11-12 in I. pseudodigonicus) and a terminal caudal pore slightly directed dorsally. It is also related to I. bangkokensis Buangsuwon et Jensen, 1966 from which it differs in having a larger body size and buccal cavity, a suprabasal dorsal tooth and tail tip not clavate.

SUMMARY

Iotonchus kirbyi n. sp. and I. rapidulus n. sp. are described from Fiji Islands. Both species are pseudo-monodelphic having a reduced, non-functional posterior branch of reproductive organs. I. kirbyi has females 2.84-3.31 mm long, vulva 1.82-2.39 mm from anterior end of body and stoma 58-64 μm long by 31-33 μm wide. I. rapidulus females are 1.7-2.3 mm long and have vulva at 1.15-1.42 mm from anterior end and stoma 30-36 μm long by 19-27 μm wide.

LITERATURE CITED


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